

CLAIMS

1. A method for growing a high quality single crystal comprising growing a single crystal by bringing a seed crystal
5 into contact with a raw material melt which is heated and melted within a crucible, wherein a blade member or a baffle member is arranged in the raw material melt in the crucible, and the crystal is grown with rotating the crucible without rotating the blade member or the baffle member.

10 2. A method according to claim 1, wherein the single crystal is grown by slowly pulling up the seed crystal which is brought into contact with the raw material melt.

3. A method according to claim 1, wherein the crystal is grown by slowly cooling the raw material melt with which
15 the seed crystal makes contact below liquid level to precipitate a single crystal on the surface of the seed crystal.

4. A method according to anyone of claims 1 to 3, wherein the seed crystal is also rotated while rotating the crucible.

5. A method according to anyone of claims 1 to 4, wherein
20 a single crystal of an oxide is grown.

6. A method according to claim 5, wherein the single crystal of an oxide is a single crystal of a borate type oxide.

7. A method according to claim 6, wherein the borate type oxide is $\text{CsLiB}_5\text{O}_{10}$ or an oxide obtained by partially
25 substituting at least one of Cs and Li of $\text{CsLiB}_5\text{O}_{10}$ with at least one type among other alkali metal elements and alkali earth metal elements.

8. A method according to claim 7, wherein the oxide is an oxide doped with at least one of Al and Ga elements.

9. A method according to claim 6, wherein the borate type oxide is represented by $Gd_xY_{1-x}Ca_4O(BO_3)_3$ ($0 < x < 1$) and the
5 crystal is grown by a pulling method.

10. A method according to claim 5, wherein the single crystal of an oxide is $LiNbO_3$, $LiTaO_3$, a high-temperature superconductive oxide material or a heat-electricity-conversion oxide material.

11. An apparatus for growing a high quality single crystal by bringing a seed crystal into contact with a raw material melt which is heated and melted within a crucible, comprising a blade member or a baffle member arranged in the raw material melt in the crucible and a rotating material for
15 rotating the crucible.

12. A growing apparatus according to claim 11 comprising a pulling mechanism for slowly pulling up the seed crystal which is brought into contact with the raw material melt.

13. A growing apparatus according to claim 11 comprising a cooling mechanism for slowly cooling the raw material melt, with which the seed crystal makes contact, below liquid level.

14. A growing apparatus according to any one of claims 11 to 13 comprising a mechanism for rotating the seed crystal.

15. An apparatus for growing a single crystal of an oxide comprising the growing apparatus as claimed in any one

of claims 11 to 14.

16. A growing apparatus according to claim 15 being used for growing a single crystal of a borate type oxide.

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